velocity of 48 miles an hour was registered. Near Chicago a small yacht was capsized and a yachtsman drowned.

A severe local storm occurred in western Wisconsin during the early evening of the 12th, which was most destructive at New Richmond, a town of about 1,500 inhabitants, of whom 114 were reported to have been killed by the fury of the storm, which also wrecked a large number of the most substantial buildings in the main portion of the town. At Herman, Nebr., during the early evening of the 14th, a severe local storm killed several people and demolished several buildings. The forecasts on these occasions were for thunderstorms and showers.—*E. A. Beals, Inspector.*

PORTLAND, OREG., FORECAST DISTRICT.

No storm or frost warnings were issued during the month.

River bulletins were regularly issued, except on Sundays, and on the 30th the river rose and flooded cellars as far back as Fourth street, also some lumber mills along the water front. Owing to timely warnings issued by the Portland office, however, there was no loss of any kind, except such as resulted from inconvenience of moving goods.

Many compliments have been given the Bureau for its river work.—*B. S. Pague, Forecast Official.*

SAN FRANCISCO FORECAST DISTRICT.

Beginning June 1, 1899, a special wheat bulletin was issued daily, except on days when the weekly crop bulletin was printed. This wheat bulletin gave data from the chief points in the great valley of California. This valley is the great wheat growing section of California.

Maximum temperatures exceeding 100° occurred on many days during the month. No northers, however, occurred, and the conditions on the whole were most favorable for the ripening wheat. It is unusual for the month of June to pass without the occurrence of a norther. A sharp outlook was kept that warnings might be given in time, but happily the warnings were not needed.

The storm of May 31 and June 1 was successfully forecast, and rain warnings were issued generally throughout the State of California.

Beginning June 17 a special fog service was inaugurated. The ferry pilots are notified by telephone of the extent and density of the fog in the roadstead outside of the Golden Gate.—*Alexander G. McAdie, Forecast Official.*

AREAS OF HIGH AND LOW PRESSURE.

During the month there were seven highs and six lows sufficiently well defined to be traced upon Charts I and II. The accompanying table gives the principal facts about the origin, disappearance and apparent velocity of these highs and lows, and the following description is added:

Highs.—All the highs of the month were first noted on the Pacific coast except VI (in Minnesota) and VII (in North Dakota). The general motion was toward the east and a little south of east. No. V was last noted in Ohio, and all the rest disappeared in the Atlantic. It should be noted that the observations at St. Johns, Newfoundland, were not available after the 3d, so that for both highs and lows the last appearance in that region could not be located exactly.

Lows.—All the lows except I (off the north Pacific) and II (in Idaho) were first noted to the north of Montana. There was evidently in this region a condition favorable to the development of lows, as can be easily seen by examining Chart II. The general tendency was eastward. All but VI (off the middle Atlantic coast) were last noted in the Gulf of St. Lawrence.

One of the remarkable features of the month was the phenominal fall of 33 inches of rain in ninety hours at Turnersville, Tex., although no low area of any moment was present. The conditions of this rainfall will be described in a special article in this REVIEW.

The following were the highest winds of the month: On the evening of the 1st, as low No. IX, of May, passed over the lower Lake region, Cleveland reported a south wind of 48 miles an hour, in connection with a thunderstorm. On the evening of the 4th Green Bay reported a thunderstorm wind of 40 miles from the southwest. On the evening of the 6th Detroit had a thunderstorm west wind of 40 miles, and Cleveland a similar wind from the north. On the morning of the 10th Norfolk reported a southwest thunderstorm squall of 40 miles, and Cape Henry one from the northwest of 48 miles. On the morning of the 13th, as low No. II was approaching the upper Lakes, Marquette had a southeast wind of 46 miles. As the same low approached New England, evening of the 15th, New York City reported a west wind of 46 miles. On the morning of the 29th, as storm No. VI approached the middle Atlantic coast Nantucket reported a northeast thunderstorm wind of 48 miles, and on the evening of the same day Cape Henry reported a thunderstorm wind from the northwest of 64 miles.

The following were the days of culminating thunderstorms as reported by telegraph from the regular stations of the Weather Bureau: 1st, 23; 2d, 21; 24th, 21; 25th, 21; and 28th, 23.—*H. A. Hazen, Professor.*

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
High areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I	8, a.m.	36	123	5, p.m.	32	78	4,200	8.5	494	20.6
II	6, p.m	48	129	12, a.m.	41	68	3,210	5.5	584	24.3
III	12, p.m.	47	129	20, a.m.	31	79	3,900	7.5	520	21.7
IV	17, a.m.	46	126	23, p.m.	42	65	3,360	6.5	517	21.5
V	20, p.m.	44	126	24, p.m.	41	82	2,280	4.0	570	23.8
VI	24, p.m.	47	93	28, a.m.	33	77	1,680	3.5	480	20.0
VII	27, p.m.	48	102	†2, a.m.	37	73	2,400	4.5	533	22.2
Total							21,030	40.0	3,698	154.1
Mean of 7 paths							3,004		528	22.0
Mean of 30.0 days									526	21.9
Low areas.										
I	*30, p.m.	48	129	10, a m.	49	55	5,160	10.5	491	20.5
II	9, p.m.	54	114	16, p.m.	45	60	3,780	7.0	540	22.5
III	15, p.m.	52	114	19, a.m.	48	65	2,400	3.5	686	28.6
IV	17, p.m.	51	112	22, a m.	47	61	2,640	4.5	587	24.4
V	19, p.m.	51	117	24, p.m.	51	65	2,790	5.0	558	23.3
VI	24, a.m.	44	115	29, a.m.	39	74	3,000	5.0	600	25.0
Total							19,770	35.5	3,462	144.3
Mean of 6 paths							3,295		577	24.0
Mean of 45.5 days									557	23.2

*May. †July.

RIVERS AND FLOODS.

Except in the Columbia and Brazos river basins, the rivers in all sections of the country had a falling tendency, indicating the approach of the usual low-water stages of summer.

General and copious rains over the headwaters of the Mississippi and Missouri rivers during the first half of the month checked the fall and kept the water in the upper portion of those streams at a slightly higher stage than during May.

The effect of this rise on the lower river was hardly perceptible and no danger stages were reported from any of the regular river stations on the Mississippi. On the Missouri, however, a danger stage was attained at Kansas City, where a gage reading of 21.4 feet was recorded on the 11th. In the Red River of the South there was also a slight rise.

The annual spring rise which began in the Columbia River about the middle of May continued throughout June. Forecasts of the probable river stages were issued daily from the Portland, Oreg., Weather Bureau office. The rise, however, was steady and gradual, enabling those receiving the forecasts to take necessary precautions; and, although the danger line was exceeded at several stations, no serious damage resulted.

The flood in the valley of the Brazos River at the close of the month, and during the early days of July, was sudden and destructive, and was the first important flood along that river since 1852, the flood of 1885 being classed as only a moderate one.

As the Brazos Valley flood of June–July, 1899, culminated in the latter month, a discussion of its apparant causes and observed characteristics will be made a feature of the MONTHLY WEATHER REVIEW for July, 1899.

The following preliminary report by I. M. Cline, Official in Charge of the Weather Bureau office at Galveston, Tex., contains, however, much information which is of value and interest in this connection:

The flood in the valley of the Brazos River, commencing June 29 in central Texas and passing out into the Gulf of Mexico between the 12th and 15th of July, 1899, has been, in all respects, the most destructive flood which that section, one of the most productive in Texas, has ever experienced. The Brazos River, with its deep channel, has the capacity for carrying off a vast amount of water, and as a result destructive floods on this river are very rare. According to calculations published in a special bulletin of the Texas Section, Climate and Crop Service, the Brazos River discharges into the Gulf of Mexico, on an average, annually, during the months of April, May, and June, 6,447,403,576 cubic yards of water. In this instance it has been required to carry off more than this amount of water in fifteen days.

Phenomenally heavy rains fell on June 28 and 29 over the drainage basin of the Brazos River in the central portion of the State, and these were followed by heavy rains for four or five days in succession. On June 29 all the tributaries of the Brazos River from McLennan County south to Brazos County were higher than they had ever been before. This water, with that of succeeding rains, caused a flood in the Brazos which inundated all low lands to a depth ranging from 2 to 12 feet. In places it is said that the river was more than 12 miles wide. The flood moved southward very slowly, and it was fourteen days from the time the crest of the flood was noted in central Texas until it passed out into the Gulf of Mexico.

The damage to crops has been very great. All crops on the immediate river bottoms from McLennan County south are a total loss. The land bordering on the Brazos River is the most productive in the State. There was a large acreage in cotton, corn, sugar cane, and other crops. The following are the counties which have suffered the greatest damage: McLennan, Falls, Robertson, Milam, Brazos, Burleson, Grimes, Washington, Waller, Austin, Fort Bend, and Brazoria. There has been a small acreage inundated in some other counties, but no great damage resulted outside of these. Cotton planters have suffered most. The loss of corn has been great, and besides the crop now growing there was a large amount of last year's crop yet in the bins which has been spoiled. Sugar cane plantations in the Brazos bottoms have suffered much. In some places half the crop has been destroyed. The minor crops are also of considerable importance in some of these counties, and the loss of these represents a large sum. Farming implements, stock, and many of the small tenant houses in the bottoms have been washed away. Houses left standing are in many instances not in a fit condition for use. The total losses, judging from press reports and other available information, will aggregate nearly ten million dollars. The number of people who are left without means of sustenance is very large. The towns which have suffered most are Calvert, Brookshire, Richmond, Sandy Point, Columbia, and Brazoria. While the water was well up in some of these towns no great damage resulted except to small settlements in low parts of the surrounding country. There was much suffering during the early part of the flood from hunger and exposure. Notwithstanding rescue parties were organized as rapidly as possible some of the sufferers were in tree tops and on houses for two or three days without food. Life saving crews were organized at Galveston and other points, and sent with boats to aid in the rescue. The Government boats at Galveston were ordered to the assistance of the sufferers. The efficient work of the rescuers prevented many fatalities, and it now appears that the total number of casualties, as a result of the flood, will fall somewhere between forty and fifty.

Action has already been taken by some farmers to plant other crops where cotton and corn have been destroyed. Some cotton will be planted, but to what extent can not be even approximated. Efforts are being made to get the farmers in the flood district to plant a variety of crops. It is desired to make the district self sustaining as soon as possible, and many who have interests along the Brazos River consider this the best course to pursue.

Col. John D. Rodgers of Galveston, who is one of the largest planters along the Brazos River, went to his plantation as soon as he learned of the approaching flood with the intention of looking after his interests personally. Mr. Rogers makes the following statement, which will no doubt be of interest in connection with this report:

"The water around the quarters on my place was from 4 to 4½ feet deep. It was at least 4 to 4½ feet higher than in 1885, and from what information I can get it was at least 2½ to 3 feet higher than in 1852, probably as high if not higher than in 1843. I remember the overflows of 1843 and 1852, but as I was then at different places it is difficult for me to make comparisons. My impression is that it was higher in 1843 than in 1852, and the old citizens in the time of those floods said the rise of 1843 was greater than that of 1833.

"Until the flood of this year we have had but two general overflows, in 1843 and 1852. The flood of 1885 was but partial; it did not overflow more than half of my plantation. The floods in former times have nearly always been in May, giving us plenty of time to replant and make a crop."

The highest and lowest water, mean stage, and monthly range at 128 river stations are given in the accompanying table. Hydrographs for typical points on seven principal rivers are shown on the accompanying chart. The stations selected for charting are: Keokuk, St. Louis, Cairo, Memphis, Vicksburg, and New Orleans on the Mississippi; Cincinnati, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.—*F. W. Krichelt, Weather Bureau.*

Heights of rivers referred to zeros of gages, June, 1899.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
St. Paul, Minn	1,957	14	11.0	22,23	5.7	1	9.6	5.3
Reads Landing, Minn	1,887	13	8.9	18	4.9	2	7.2	4.0
La Crosse, Wis	1,832	12	11.8	18	7.1	1-3	9.5	4.7
North McGregor, Iowa	1,762	18	14.4	19-21	7.9	2	11.0	6.5
Dubuque, Iowa	1,702	15	14.8	23-24	8.4	2,9,10	11.2	6.4
Leclaire, Iowa	1,612	10	9.4	24-26	5.4	12,13	7.2	4.0
Davenport, Iowa	1,596	15	11.9	25	7.0	12,13	9.2	4.9
Muscatine, Iowa	1,565	16	13.3	26,27	8.5	13	10.8	4.8
Galland, Iowa	1,475	8	6.7	29	4.1	14	5.4	2.6
Keokuk, Iowa	1,466	14	12.0	29,30	7.7	14,16,17	9.8	4.3
Hannibal, Mo	1,405	17	13.2	30	9.2	18,19	11.2	4.0
Grafton, Ill	1,307	23	16.3	4,5	12.3	21-23	14.1	4.0
St. Louis, Mo	1,264	30	24.8	14	19.8	26	22.4	5.0
Chester, Ill	1,189	36	20.3	15	15.5	27,28	18.2	4.8
Memphis, Tenn	843	33	22.4	1	16.1	30	19.1	6.3
Helena, Ark	767	42	31.6	1,2	23.9	30	27.9	7.7
Arkansas City, Ark	685	42	37.5	1	27.2	30	32.6	10.3
Greenville, Miss	595	42	31.8	1	22.8	30	27.4	9.0
Vicksburg, Miss	474	45	37.1	1	27.4	30	32.2	9.7
New Orleans, La	108	16	13.5	1	10.2	29,30	11.9	3.3
Missouri River.								
Bismarck, N. Dak	1,201	14	11.8	27	7.9	1	9.5	3.9
Pierre, S. Dak	1,006	14	11.5	28	7.5	2	9.7	4.0
Sioux City, Iowa	676	19	14.0	8	10.2	5	12.0	3.8
Omaha, Nebr	561	18	13.7	15,16	11.0	6	12.6	2.7
Plattsmouth, Nebr	533	17	10.5	30	7.9	6	9.3	2.6
St. Joseph, Mo	373	10	10.1	10	7.8	7	8.8	2.3
Kansas City, Mo	280	21	21.4	11	16.6	8	18.7	4.8
Boonville, Mo	191	20	18.3	12	14.2	25	16.0	4.1
Hermann, Mo	95	24	18.3	13	13.5	26	15.8	4.8
Des Moines River.								
Des Moines, Iowa	150	19	9.2	17	4.8	7,8	6.8	4.4
Illinois River.								
Peoria, Ill	135	14	8.5	6-8	4.1	30	6.8	4.4
Beardstown, Ill	70	12	11.8	1,5,6	7.2	30	10.0	4.6
Osage River.								
Bagnell, Mo	70	28	11.8	11	2.3	27,28	5.9	9.5
Gasconade River.								
Arlington, Mo	58	16	—0.2	1	—1.0	23-30	—0.6	0.8
Youghiogheny River.								
Confluence, Pa	59	10	4.0	16	1.4	29	2.3	2.6
West Newton, Pa	15	23	2.2	3	0.4	25	1.2	1.8
Allegheny River.								
Warren, Pa	177	7	2.5	1	0.4	25-30	0.9	2.1
Oil City, Pa	123	13	2.9	1	0.6	29	1.3	2.3
Parkers Landing, Pa	73	20	4.4	1	1.0	15,23,24	1.8	3.4

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Monongahela River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Weston, W. Va	161	18	2.5	2	— 0.8	24-26	0.6	3.3
Fairmont, W. Va	119	25	4.8	15	0.6	9, 10	1.9	4.2
Greensboro, Pa	81	18	10.5	15	7.5	10	8.3	3.2
Lock No. 4, Pa	40	28	11.5	16	6.9	10	8.3	4.6
Conemaugh River.								
Johnstown, Pa	64	7	2.4	29	1.0	28	1.5	1.4
Red Bank Creek.								
Brookville, Pa	35	8	0.9	2	0.4	17, 24	0.6	0.5
Beaver River.								
Ellwood Junction, Pa.	10	14	2.7	1	0.6	24	1.3	2.1
Great Kanawha River.								
Charleston, W. Va	61	30	10.0	15	4.9	20	6.9	5.1
New River.								
Hinton, W. Va	95	14	5.0	14	1.9	9–11 24–26	2.6	3.1
Cheat River.								
Rowlesburg, W. Va	36	14	8.0	16	2.0	1, 6–8, 13	3.9	6.0
Ohio River.								
Pittsburg, Pa	966	22	7.2	16	3.2	6	5.5	4.0
Davis Island Dam, Pa	960	25	7.9	1	3.5	27	5.1	4.4
Wheeling, W. Va	875	36	9.8	1	4.0	28	6.3	5.8
Parkersburg, W. Va	785	36	11.8	2	6.0	30	8.0	5.8
Point Pleasant, W. Va	703	39	14.6	3	5.0	30	8.3	9.6
Catlettsburg, Ky	651	50	17.2	4	7.4	30	10.9	9.8
Portsmouth, Ohio	612	50	17.6	4	8 8	30	11.9	8.8
Cincinnati, Ohio	492	50	18.7	5	11.0	13, 28	13.6	7.7
Louisville, Ky	367	28	7.9	7	5.8	14, 15, 30	6.6	2.1
Evansville, Ind	184	35	13.3	9, 10	8.6	30	10.7	4.7
Paducah, Ky.[1]	47	40	14.9	1	8.5	30	12.1	6.4
Cairo, Ill	1,073	45	27.9	1	21.5	30	25.3	6.4
Muskingum River.								
Zanesville, Ohio	70	20	12.1	2	6.4	19	8.3	5.7
Miami River.								
Dayton, Ohio	69	18	1.7	1	0.9	29, 30	1.3	0.8
Wabash River.								
Mount Carmel, Ill	50	15	6.4	5	2.4	30	4.0	4.0
Licking River.								
Falmouth, Ky	30	25	3.5	16	1.3	2, 7, 8	2.0	2.2
Clinch River.								
Speers Ferry, Va	156	20	5.3	14	0.2	9, 10	2.4	5.6
Clinton, Tenn	46	25	9.5	16	3.4	12	4.8	6.1
Tennessee River.								
Knoxville, Tenn	614	28	3.1	16	0.1	24	0.9	3.0
Kingston, Tenn	534	25	3.7	2	1.4	24, 25	2.6	2.3
Chattanooga, Tenn	430	33	6.6	17	3.0	26	4.4	3.6
Bridgeport, Ala	390	24	4.5	16, 18	1.4	27	2.6	3.1
Florence, Ala	220	16	3.8	20	1.2	30	2.3	2.6
Riverton, Ala	190	25	4.2	18, 20	0.7	29, 30	2.3	3.5
Johnsonville, Tenn	94	21	5.1	21, 22	2.5	30	3.7	2.6
Cumberland River.								
Burnside, Ky	434	50	4.9	3	1.6	25	2.5	3.3
Carthage, Tenn	257	30	4.2	4	1.5	28–30	2.5	2.7
Nashville, Tenn	175	40	5.6	5, 6	2.1	30	3.7	3.5
Arkansas River.								
Wichita, Kans	720	10	6.3	10	1.6	1, 2	3.5	4.7
Webbers Falls, Ind. T	407	23	15.9	14	5.0	28, 30	8.9	10.9
Fort Smith, Ark	345	22	16.3	15	6.3	30	7.0	10.0
Dardanelle, Ark	250	21	16.4	16	5.7	30	10.3	10.7
Little Rock, Ark	170	23	16.9	17	7.0	30	11.5	9.9
White River.								
Newport, Ark	150	26	14.3	3	3.5	30	7.4	11.8
Yazoo River.								
Yazoo City, Miss	80	25	11.6	1	2.1	30	6.6	9.5
Red River.								
Arthur City, Tex	688	27	17.4	19	8.3	8	11.3	9.1
Fulton, Ark	565	28	21.8	2	9.0	30	15.2	12.8
Shreveport, La	449	29	12.5	23	9.7	1, 12	11.2	2.8
Alexandria, La	139	33	11.5	9	8.6	16	9.9	2.9
Ouachita River.								
Camden, Ark	340	39	31.4	3	5.1	28	14.0	26.3

Heights of rivers referred to zeros of gages—Continued.

Stations.	Distance to mouth of river.	Danger line on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Ouachita River—Con.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Monroe, La	100	40	22.4	16	8.4	30	19.4	14.0
Atchafalaya Bayou.								
Melville, La	100†	31	30.5	1	26.3	30	28.4	4.2
Susquehanna River.								
Wilkesbarre, Pa	178	14	0.8	30	0.0	1–28	0.0	0.8
Harrisburg, Pa	70	17	2.6	2	1.0	24	1.7	1.6
W. Br. of Susquehanna.								
Williamsport, Pa	35	20	2.4	1.2	0.5	22, 24	1.3	1.9
Juniata River.								
Huntingdon, Pa.[2]	80	24	3.5	3–6	3.0	10–30	3.1	0.5
Potomac River.								
Harpers Ferry, W. Va	170	16	3.6	3	1.7	28–30	2.4	1.9
James River.								
Lynchburg, Va	257	18	1.9	14	0.2	24–26	0.9	1.7
Richmond, Va	110	12	0.9	14, 15, 28	—0.2	23, 25	0.3	1.1
Roanoke River.								
Clarksville, Va	155	12	8.2	14	2.0	26	3.4	6.2
Weldon, N. C	90	40	27.5	14	7.5	9, 10	10.9	20.0
Cape Fear River.								
Fayetteville, N. C	100	38	11.1	14	2.5	26	5.1	8.6
Lumber River.								
Fairbluff, N. C	10	6	4.5	17–19	1.2	30	3.2	3.3
Edisto River.								
Edisto, S. C	75	6	4.6	22, 23	2.8	8, 9	3.3	1.8
Pedee River.								
Cheraw, S. C	145	27	6.9	15	1.0	27	2.8	5.9
Black River.								
Kingstree, S. C	60	12	1.7	1	1.0	20, 21	1.4	0.7
Lynch Creek.								
Effingham, S. C	35	12	4.1	23	2.6	30	3.2	1.5
Santee River.								
St. Stephens, S. C	50	12	5.5	18	1.7	29	3.6	3.8
Congaree River.								
Columbia, S. C	37	15	1.1	14	0.0	25	0.5	1.1
Wateree River.								
Camden, S. C	45	24	8.8	12	4.3	27	5.8	4.5
Waccamaw River.								
Conway, S. C	40	7	4.0	24	1.7	8, 9	2.6	2.3
Savannah River.								
Calhoun Falls, S. C	.....	.....	5.0	13	2.9	7, 24, 25	3.4	2.1
Augusta, Ga	180	32	9.8	14	6.3	26	7.5	3.5
Broad River.								
Carlton, Ga	.....	.....	3.7	13, 26	2.3	23–25	2.6	1.4
Flint River.								
Albany, Ga	80	20	2.4	1, 2	0.3	22–23	1.2	2.1
Chattahoochee River.								
West Point, Ga	239	20	4.1	15	2.5	23	3.1	1.6
Coosa River.								
Rome, Ga	225	30	4.0	14	1.7	23–26	2.2	2.3
Gadsden, Ala	144	18	3.3	15, 16	0.7	24–28	1.5	2.6
Alabama River.								
Montgomery, Ala	265	35	3.8	4	1.2	23–25	2.5	2.6
Selma, Ala	212	35	4.5	1	1.4	24, 25	2 9	3.1
Tombigbee River.								
Columbus, Miss	285	33	—1.3	25	—2.9	23	—2.3	1.6
Demopolis, Ala	155	35	1.3	1	—1.9	2	—0.7	3.1
Black Warrior River.								
Tuscaloosa, Ala	90	38	2.0	1	—0.1	23–25	0.5	2.1
Columbia River.								
Umatilla, Oreg	270	25	25.2	21	17.1	1	21.4	8.1
The Dalles, Oreg	166	40	43.0	22	28.5	1	36.3	14.5
Willamette River.								
Albany, Oreg	99	20	8.0	3	5.0	2, 3	6.6	3.0
Portland, Oreg	10	15	24.2	23	17.1	1	21.1	7.1
Sacramento River.								
Red Bluff, Cal	241	23	4.	1	0.9	29, 30	1.7	3.7
Sacramento, Cal	70	25	17.2	6	12.0	30	14.9	5.2

[1] Record for 30 days. [2] Record for 28 days.

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Rainfall is expressed in inches.

Alabama.—The mean temperature was 79.8°, or 2.2° above normal; the highest was 105°, at Selma on the 23d, and the lowest, 49°, at Oneonto on the 18th. The average precipitation was 2.54, or 1.87 below normal; the greatest monthly amount, 9.50, occurred at Daphne, and the least, 0.64, at Eufaula.—*F. P. Chaffee.*

Arizona.—The mean temperature was 78.8°, or 1.6° below normal; the highest was 120°, at Aztec and Parker on the 30th, and at Texas Hill on the 17th and 29th, and the lowest, 25°, at Prescott on the 2d. The average precipitation was 0.82, or 0.71 above normal; the greatest amount, 2.52, occurred at Pantano, while none fell at Buckeye and Sentinel—*W. G. Burns.*

Arkansas.—The mean temperature was 77.3°, or 0.1° above normal; the highest was 102°, at Jonesboro on the 5th, and the lowest, 50°, at Witts Springs on the 18th. The average precipitation was 2.74, or 1.22 below normal; the greatest monthly amount, 5.90, occurred at Pond, and the least, 0.20, at Luna Landing.—*E. B. Richards.*

California.—The mean temperature for the State, obtained by weighting the reports from 290 stations, so that equal areas have about the same weight, was 71.5°, or 0.5° above the June normal for the State, as determined from 201 records; the highest was 122°, at Volcano Springs, on the 13th, and the lowest, 23°, at Bodie on the 26th. The average precipitation for the State, as determined by the records of 300 stations, was 0.57; the excess, as indicated by reports from 167 stations which have normals, was 0.30; the greatest monthly amount was 4.05,